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WILDLIFE IN LAND PLANNING

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Introduction

Planning for wildlife in the United States has engaged the attention of the Land Planning Committee of the National Resources Board and is the subject of a comprehensive report by that body. The Committee rightly insists on the economic, social, and recreational importance of wildlife and asserts that wildlife cannot be ignored in any comprehensive, well-considered plan for land utilization. Wildlife has a more or less direct bearing upon land uses almost everywhere and to insure wise use must be taken into account.

Value of Wildlife

In ordinary usage the term wildlife refers to animals that are of much interest or value to man. Value is measured primarily on a dollars and cents basis, but there is growing recognition that recreational values may thus be appraised, for certainly they are worth what people are willing to pay for them. Recreational expenditures based on wildlife attractions are those of hunters and fishermen, almost wholly, and of vacationists and tourists, in part.

The annual value of wildlife has been estimated for humid districts of the United States at 14 cents per acre for meat and fur production, and 22.6 cents for destruction of insects and other agricultural pests; and for arid regions, 4 cents and 13.3 cents, respectively. Fish production has been rated at 44 cents per acre of fresh water. Expenditures of hunters for

license fees and for transportation, board, etc., estimated conservatively at $25 per man, have aggregated more than $150,000,000 in some years. Crediting only a tenth of the expenditures of tourists to the drawing powers of wildlife yields an even larger sum. Without being too definite as to figures or too sanguine as to the dependability of the estimates, it is at least evident that wildlife is worth some hundreds of millions of dollars annually to the people of the United States.

Wildlife plays a negative as well as a positive role in the scale of values. There are injurious, as well as neutral and beneficial forms, and control of the noxious species when necessary is just as much a part of proper wildlife management as is encouragement of the useful kinds. The Biological Survey throughout its history has given special attention to the practical aspects of the relations of wildlife to the people of the United States and continues to serve very generally in investigating problems and adjusting difficulties in wildlife economics.

Wildlife Protection

Recognition of the economic importance of wildlife has its most widespread expression in legislation. Every State has passed laws regulating the taking of game species. In most cases these animals are protected for the greater part of the year, and not rarely for all of it excepting an open season of only a few days. The purpose of such laws is to provide an undisturbed breeding season for all species and to give as much additional protection as may be required to safeguard any from undue depletion. When properly designed and enforced such laws assure continuation of the values, direct and recreational, that the wildlife has for the State.

Not only game animals, but fur bearers have been given legal protection, although laws relating to the fur animals, on the whole, are of later and not so effective development. They are, however, steadily being improved. Song and insectivorous birds receive very comprehensive legal protection, action that was taken in the first instance, at least, in recognition of the services of birds in preying upon insect pests and other creatures noxious to man. At the present time there is a more evident disposition to protect birds and even other animals for their esthetic values.

So far as birds are concerned, the most important single step in protection was ratification of a treaty for the protection of migratory birds in the United States and Canada in 1916. Migratory game birds and insectivorous and other nongame birds are protected by the treaty and by its enabling act, passed in 1918, the leading reason again being economic. A part of the preamble of the treaty reads, "Whereas many of these species are of great value as a source of food or in destroying insects which are injurious to forests and forage plants on the public domain, as well as to agricultural crops . . . [the contracting powers] being desirous of saving from indiscriminate slaughter and insuring the preservation of such migratory birds . . . have resolved to adopt some uniform system of protection."

Unfavorable Alteration of Environment

Value has been recognized by protection, but protection alone has been insufficient to prevent reduction in numbers of some forms of wildlife. Reasons for continued diminution regardless of protection usually are associated with increase in the human population. In some regions the number of hunters may have increased faster than compensating factors could be provided in law, or demand may have sheerly exceeded the possibilities of supply in the existing state of wildlife management. Another unfavorable effect and a less remediable one has been due to increasing human occupation of land--of range that wildlife must have to exist at all.

Forests have been felled, prairies ploughed, swamps and marshes drained--all on such a scale as to reduce materially the habitable range of many forms of wildlife. Where land of permanent agricultural value has thus been taken over, the process must be accepted as part of the inevitable results of increase in numbers of the human race. In many cases, however, not only has wildlife been the loser but man himself has gained only a small or temporary advantage, or even none at all. It should no longer take repeated experiences along this line to bring realization that it is a mistake to cultivate marginal lands. It is only too obvious in certain sandy areas, muck lands, and arid regions that men have attempted the impossible in trying to make a living by farming there. Old fields now waste, once hopeful farmsteads now falling into ruin, bear eloquent testimony that serious economic mistakes have been made for lack of sufficient knowledge of the land and its possibilities, or in other words for failure to put into effect rational land planning. Not only have families pitiably starved out and lost their all in ill-advised land utilization, but natural conditions have been changed, often irreparably, and the wildlife dependent upon them has been robbed, sometimes permanently, of territory necessary to its existence.

The combined effects of legitimate agricultural use and of illegitimate exploitation of land have so altered the surface of the country that many forms of wildlife are restricted to a small fraction of their former range. This eviction is especially evident in the case of inhabitants of marsh and swamp areas, the nature of which usually is totally changed by drainage. Muskrats and waterfowl are economically valuable groups of wildlife that have been seriously affected by drainage operations. In some regions efforts to carry water away have been so thorough and long continued that the level of the ground water seems to have been permanently lowered. In such districts shallow depressions will no longer hold water, and the marshy conditions so favorable for wild-fowl breeding cannot be restored.

Restoration of Environment

We can attempt to remedy at least in part our lack of land planning and our mistakes in land management by restoring misused areas to as nearly as possible their former productiveness. Sometimes marshes can be brought back by damming drainage ditches, action that not only aids in flood control, but furnishes homes again for wild fowl and fur animals. Rather than let the ploughed prairie dry up and blow away, we had better return it to grass in

which it will have value to man not only in furnishing permanent pasturage for his domestic stock, but also in supporting quail, prairie chickens, rabbits, and other wildlife valuable in providing food and recreational advantages. Where lands have been unwisely cleared of forest growth, they can in time be restored and managed for the production of wood for timber, posts, and firewood, and of wildlife for meat, fur, and hunting and trapping privileges so as to contribute significantly to the support of more people than is the case when they are misused for farming. Our greatest national sin, perhaps, has been the creation of conditions permitting destructive soil erosion. In trying again to stabilize the land and check the run-off of rain, the most effective and economical steps are as beneficial to wildlife as they are to the land. Among them, the growing of shrubbery on terrace banks and in ravines, the planting of trees for windbreaks and woodlots, and in general the maintenance and improvement of the vegetative cover of the land are boons to wildlife as well as important steps in erosion control.

Allotment of Land to Wildlife

While it is advantageous to man to take wildlife into consideration in connection with land planning, it was necessary for the sake of the wildlife itself to set aside areas for its use long before the nation became land planning conscious. As a matter of fact definite allotment of land for the use of wildlife has been going on for some decades. In a period when it has been difficult even to get recognition of the theoretical advisability of taking wildlife into consideration in land planning programs, considerable actual progress in setting aside areas for wildlife utilization has been made through the persistent efforts of devoted individuals and organizations, aided at all times, it must be gratefully recorded, by the favorable attitude of the Chief Executives of the United States. The first national bird reservation (Pelican Island, Florida) was created by Executive order in 1903, and by similar action the Mount Olympus National Monument in Washington for elk, and the Fire Island Reservation in Alaska for moose, in 1909. The movement grew apace and by 1926 there were 12 national game refuges in the national forests, comprising 1,199,000 acres; 7 others in military national forests or parts thereof comprising 164,000 acres; 72 Federal game and bird refuges aggregating 489,000 acres administered by the Biological Survey; 19 national parks, all wildlife sanctuaries, totaling 7,562,000 acres; 18 national monuments, 471,000 acres; and 22 military, naval, and fishery reservations adding a further 41,000 acres. At that time (1926) the number of Federal wildlife refuges in the United States was computed at 148, totaling more than 10,000,000 acres.

Up-to-date statistics for all agencies are not available, but activity in reserving lands for wildlife has been greatly intensified by Federal agencies since 1926. State governments and both national and local conservation societies also have participated in refuge establishment. In 1933 the National Association of Audubon Societies had 110 island, lake, and marsh or swamp sanctuaries, and the Federal and State reserves were estimated to be at least 1,300 in number. On July 1, 1936, wildlife refuges under the jurisdiction of the Biological Survey numbered 164, of which 10 are maintained primarily as big-game ranges and preserves. In addition, 50 bird refuges were in process of establishment on that date but not yet placed under administration by the Survey.

Management Necessary

With some millions of acres set aside for wildlife protection, it might seem that responsibilities in this respect have been fully discharged, but it must not be forgotten that there is a vast difference between mere protection of wildlife and its proper administration. Most of the reserved areas afford protection only, and that merely nominal where wardens are not employed. Realization that refuges must be properly keepered and wildlife conscientiously managed has recently developed on all sides. Better results from reserved areas in general, therefore, may confidently be expected.

The National Park Service has adopted wildlife management as a definite policy on all its holdings. The Forest Service has been giving attention to wildlife administration for some years, has created a Division of Wildlife Management (1936), and has a cooperative agreement with the Bureau of Biological Survey affecting the planning and inauguration of wildlife management projects. Cooperation between these services has taken the form of studies and control of snowshoe hares on forest planting areas in the Lake States and of an overpopulation of deer on the Kaibab Forest of Utah. Joint effort has also been directed toward a study of the effects on wildlife of timberstand improvement in eastern forests and toward perfection of a wildlife management plan for the Superior National Forest in Minnesota. As relates to the Biological Survey itself, the big-game preserves have in each case had warden service from the date of their establishment, and wildlife management principles have been applied so far as personnel and funds have permitted. Reservations created by individual acts of Congress, namely, the Upper Mississippi River Wildlife and Fish Refuge (1924) and the Bear River Migratory Bird Refuge (1928), have been under full supervision from the first. All sanctuaries established under the Migratory Bird Conservation Act of 1929 have wardens, and all these as well as all major refuge units otherwise established under the Biological Survey, funds permitting, will have both supervision and wildlife management of the highest type.

Management in Relation to Land Use

Many, perhaps most, of the wildlife reservations mentioned were established primarily for protective purposes, and upon them management need not look forward to the harvesting of the wildlife crop but only to regulating numbers so that overstocking shall not occur. On most national forests, however, on Federal refuges having adjacent public shooting grounds, on most of the State game lands that usually surround sanctuaries, as well as on various public and private areas where hunting is an object, or trapping permissible, management should treat wildlife in every respect as a crop and strive for sustained annual yield, the benefits of which will accrue to the public, to permittees, to customers, to leaseholders, or to the owner, as the case may be. Where fees can be charged the opportunity at least exists of demonstrating that wildlife management can be made to pay. It is certain that restoration of natural conditions and utilization of natural products so far as may be feasible are more profitable and are better from every point of view than attempting the production of cultivated crops on marginal lands. Land planning must consider wildlife and proceed with a full realization that wildlife itself can be treated as a crop. In action, this process is the art of wildlife management.

Wildlife management at its best takes into consideration not only the especially desired species but also their principal animal and plant associates, both beneficial and injurious, and their habits, tolerances, diseases, distribution, movements, economic relations, and abundance. It requires maintenance of environmental conditions when they are favorable and improvement when they are not, objectives involving planting, clearing, controlled burning, fertilization, cultivation, in fact about all operations of farm or forest in their application to wildlife and its environment. Fortunately practices that create conditions favorable for wildlife are of advantage also in erosion and flood control, and some degree of wildlife management may be combined with various other uses of land.

The measurement of populations of game, fur bearers, or other species utilized is a necessity, and there must be careful regulation of the take so that the proper stock for each area shall remain unimpaired. Finally where hunting and trapping are permitted a great variety of public relations will require strict attention and diplomatic handling. To do all these things, and especially to make them pay, is a task probably beyond the capacity of any one man, but one that may not prove insuperable on large projects where competent staffs can be assembled.

Value of Wildlife Management

Wildlife management in some of its aspects has already proved itself. Protection of certain muskrat marshes and the regulation of trapping have yielded acreage income as great as or even greater than that of nearby agricultural lands. Some of the plans that have been tried for selling game to hunters under fee systems have proved temporarily successful. In some sections the leasing of hunting rights is an established practice, yielding returns at least defraying taxes. On private lands where personal satisfaction, not profits, is the motive, wildlife management probably has reached its highest development and its greatest success. Rewards and estimation of success will be of about the same nature on publicly owned tracts where no fees are charged. In any event, values or potentialities of value exist for every tract on which wildlife can live and be controlled, and intelligent management will make the most of them, whether or not they are ever actually converted into dollars.

Great values reside in wildlife, and man should so conduct himself as to assure their continuance. Such conduct includes giving full attention to wildlife needs and values in land planning. Not only is such a course prudent as bearing on the material welfare of the human race, but it is equally desirable for the possibility it holds of passing on to succeeding generations as much as possible of our heritage of wildlife--one of the most wonderful features of our continent, one of the greatest inspirations of our lives.